

## Jarrood Knibbe, Ph.D.

### University of Copenhagen

Emil Holms Kanal 6, Building 24, 5<sup>th</sup> Floor, 2300, Copenhagen, DK  
jarroodknibbe@gmail.com +45 31407440 jarroodknibbe.com

Research	Focus	<p>I am interested in bringing emerging technologies into the real world. From my research perspective, this implies (1) exploring user experience, (2) technology development, and (3) domain exploration. Currently, I am working on a project on body-based user interfaces, primarily researching symbiotic muscle reading and stimulation. My work monitors your muscle recruitment during any activity and assists your performance by dynamically recruiting additional and different muscles as necessary.</p> <p>Interests: Body-based user interfaces, user experience, muscle stimulation, virtual and augmented reality, natural user interfaces, computer-human control, gestural interaction, smart spaces.</p>
Education	2011 - 2015	<b>PhD</b> in Human-Computer Interaction, University of Bristol, BIG Lab, big.cs.bris.ac.uk <ul style="list-style-type: none"><li>PhD Thesis: <i>Designing for Embodied Reflection</i></li><li>Supervisors: Professor Mike Fraser and Professor Sriram Subramanian</li></ul>
	2006 - 2010	<b>MEng</b> , University of Bristol, First Class Honours in Computer Science, <i>Valedictorian</i> <ul style="list-style-type: none"><li>Dissertation: <i>Animat3D: 3D Animation Through Puppetry</i></li><li>Awards: New Enterprise Competition Finalist, Winner of IPL Award for Best Third Year Project</li></ul>
Professional Experience	2015 - Present	<b>Post-Doctoral Researcher</b> , University of Copenhagen, HCC <ul style="list-style-type: none"><li>Working with Professor Kasper Hornbæk researching body-based user interfaces</li><li>Responsibilities: conduct high-impact research, mentor students, collaborate with research peers, assist with teaching, assist with and participate in departmental initiatives</li></ul>
	Summer 2014	<b>Visiting Researcher</b> , Autodesk Research, Toronto, Canada <ul style="list-style-type: none"><li>Worked with Tovi Grossman and George Fitzmaurice on a Smart Makerspace.</li><li>We built an Internet of Things – based workshop, that brought research techniques from complex software tutorials into the physical makerspace. Our <i>smart</i> approach included a digital workbench, augmented toolbox, instrumented power tools and environmentally aware audio.</li></ul>
	Summer 2013	<b>Visiting Researcher</b> , Microsoft Research, Redmond, USA <ul style="list-style-type: none"><li>Worked with Hrvoje Benko and Andy Wilson on Projector-Camera latency.</li><li>Our work explored novel software solutions to projector-camera latency, setting out methodologies to support more accurate and dynamic usability of systems of this kind.</li></ul>
Research Projects	Current	<ul style="list-style-type: none"><li><b>EMS</b>: Researching new hardware to enable quick application and auto-calibration of accurate muscle stimulation (EMS). Exploring the perception of EMS through user studies and developing novel application scenarios, such as VR.</li><li><b>VR</b>: Exploring ‘motion illusions’ in VR and proposing the ‘moment of collapse’ as an experiential design opportunity.</li><li><b>Smart Textiles</b>: Developing e-textiles for hybrid hover, touch, and pressure sensing.</li></ul>
	Past	<ul style="list-style-type: none"><li><b>PowerShake</b>: developing and evaluating wireless power transfer between mobile devices to commoditize battery life.</li><li><b>Smart Makerspace</b>: an exploration of an <i>Internet of Things</i> enabled DIY workshop to support the maker community.</li><li><b>VideoHandles</b>: Exploring re-performance of gestures as a search method for action-cam footage, enabling faster reviewing of key moments of interest.</li></ul>

Select Publications	Favourite Papers (selected from ~15) HCI primarily publishes at conferences	
	<ul style="list-style-type: none"> <li>• <a href="#">Knibbe, J.</a>, Schjerlund, J., Peträus M., Hornbæk, K., The Dream is Collapsing: The Experience of Exiting VR, <i>CHI 2018 (to appear)</i>.</li> <li>• Bergstom-Lehtovirta, J., Coyle, D., <a href="#">Knibbe, J.</a>, Hornbæk K., I Really Did That: Sense of Agency with Touchpad, Keyboard, and On-skin Interaction, <i>CHI 2018 (to appear)</i>.</li> <li>• Mottelson, A., <a href="#">Knibbe, J.</a>, Hornbæk, K., Veritaps: Detecting Truth from Mobile Interaction, <i>CHI 2018 (to appear)</i>.</li> <li>• Pohl, H., Hornbæk, K., <a href="#">Knibbe, J.</a>, Wandering Through Space: Exploring Electric Muscle Stimulation, <i>AH 2018 (to appear)</i>.</li> <li>• <a href="#">Knibbe, J.</a>, Strohmeier, P., Boring, S., Hornbæk, K., Automatic Calibration of High Density Electric Muscle Stimulation, <i>IMWUT 2017 (formerly Ubicomp)</i>.</li> <li>• Worgan, P., <a href="#">Knibbe, J.</a>, Fraser, M., Martinez-Plasencia, D., PowerShake: Wireless Power Transfer between Mobile Device, <i>CHI 2016</i>.</li> <li>• <a href="#">Knibbe, J.</a>, Seah, SA., Fraser, M., VideoHandles: Replicating Gestures to Search Through Action-Camera Video, in <i>SUI 2014</i>. Award: <b>Honorable Mention</b> (top 5% of ~50 papers).</li> <li>• Seah, SA., Martinez Plasencia, D., Bennett, P., Karnik, A., Otrocol, V., <a href="#">Knibbe, J.</a>, Cockburn A., Subramanian, S., SensaBubble: A Chrono-Sensory Mid-Air Display of Sight and Smell, <i>CHI 2014</i>. Award: <b>Best Paper</b> (top 1% of ~460 papers).</li> <li>• <a href="#">Knibbe, J.</a>, O'Hara, K., Chyrsanthi, A., Marshal, M., Bennett, P., Earl, G., Izadi, S., Fraser, M., Quick and Dirty: Streamlined 3D Scanning in Archaeology, <i>CSCW 2014</i>.</li> </ul>	
	<ul style="list-style-type: none"> <li>• <a href="#">Knibbe, J.</a>, Strohmeier, P., Boring, S., Hornbæk, K., A garment fabric for reading and writing muscle activity, European Patent, 17188784.7, 2017.</li> <li>• Grossman, T., Fitzmaurice, G., <a href="#">Knibbe, J.</a>, Smart tools and workspaces for do-it-yourself tasks, US Patent App. 14/968,704, 2015.</li> <li>• Grossman, T., Fitzmaurice, G., <a href="#">Knibbe, J.</a>, Smart tools and workspaces for do-it-yourself tasks, US Patent App. 14/968,767, 2015.</li> <li>• <a href="#">Knibbe, J.</a>, Benko, H., Wilson, A., Latency Reduction in Camera-Projection Systems, US Patent App. 14/202, 2014.</li> </ul>	
Experience	Teaching	<ul style="list-style-type: none"> <li>• <b>Unit Co-coordinator and Teaching</b>, User Interface Technologies, University of Copenhagen. Teaching the research project lifecycle and hardware prototyping. To culminate in poster submissions to ACM UIST 2018. (~20 Masters Students).</li> <li>• <b>Unit Co-coordinator and Teacher</b>, Advanced Topics in HCI, University of Copenhagen. Teaching included discussions of recent publications at top venues, introduction to statistics and academic writing, literature reviews, disseminating research outside of academia. (28 Masters Students).</li> <li>• <b>Bachelor and Master's Project Supervision</b>, Computer Science, University of Copenhagen. Supervised four master' students (covering augmented reality and electric muscle stimulation) and two bachelor students (spanning advanced haptic feedback and mobile feedback).</li> <li>• <b>Unit Co-coordinator</b>, Interactive Devices Master's unit, University of Bristol. Unit covered the research project lifecycle, including collaboration, prototyping and evaluation. Resulted in four posters at ACM CHI.</li> <li>• <b>Applications of SLAM and Kinect Fusion</b>, Mobile and Ubiquitous Computing, University of Bristol. Introduced 100 MSc and MEng students to localisation and mapping, discussed novel advances in HCI, and presented application possibilities.</li> </ul>
	Service	<ul style="list-style-type: none"> <li>• <b>Associate Chair</b>, User Experience and Usability committee, CHI 2018.</li> <li>• <b>Associate Chair</b>, Engineering Interactive Systems and Technologies committee, CHI 2017.</li> <li>• <b>Video Previews Co-Chair</b>, CHI 2016 and UIST 2016.</li> <li>• <b>Student Volunteer</b>, CHI 2014 and 2015.</li> <li>• <b>Reviewer</b>: Select CHI, UIST, TEI, TVX, and ISS since 2012.</li> </ul>
Skills		<p><b>Programming:</b> Python, C#, C++.</p> <p><b>Development Kits:</b> Arduino, Natural Language Toolkit, SciKit Learn, OpenCV, Android.</p> <p><b>Images, Video, Design:</b> Adobe Photoshop, Premiere Pro, After Effects, Illustrator.</p> <p><b>Statistics:</b> SPSS, R</p> <p><b>Languages:</b> English (native), German and French (basic conversational).</p>